Pediatric Surgery

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Definitions of Terms

Pediatric Surgery - Surgery performed on a patient 16 years or less.

Pediatric patients are further subdivided into specific age groups

Fetal - Still in utero.

Premature infant - < 37 wk. gestational age.

Neonate - Newborn, birth to one month.

Infant - Up to about 1 year.

Toddler - 1 - 3 years.

Preschooler - 3 – 6 years.

School age child - 6 - 11 years.

Adolescent - 11 - 16 years.

Atresia - Congenital defect, normal body opening is not present.

Stenosis - A congenital or acquired narrowing of a tube or opening.

Congenital - A problem or defect that is present at birth.

Special Considerations for Care of Pediatric Patients

Pediatric patients are not merely small adults!

Know physiological differences between adults and pediatric patients.

Infants are at greater risk than adults for airway obstruction.

Infants are obligate nasal breathers.

Infants have small nares, a large tongue, and a short neck.

Considerations for Surgery

Infants and toddlers should be scheduled for the first cases of the day.

They have greater nutritional requirements than adults because of their higher metabolic rate.

Due to their high metabolic rate, they are prone to dehydration and hypoglycemia.

They do not tolerate NPO status well.

Infants do not have a large circulating volume - blood loss should be monitored carefully.

Sponges are weighed often to measure blood loss.

EBL - Estimated Blood Loss

Consider the ratio of weight to skin surface area and little subcutaneous fat.

Because of this infants lose body heat quickly.

Oxygen levels are carefully monitored. If oxygen is reduced they become hypoxic.

Too much oxygen may cause blindness in premature infants.

Infants may need to have their arms placed in splints post-operatively to prevent them from pulling out lines, tubes, etc.

Never leave infants and children alone!!!!

Anesthesia, Prep, and Draping for Pediatric Surgery

Surgery is usually done under general anesthesia.

Endotracheal (ET) tubes without cuffs are used for children < 8 years of age to help prevent airway trauma.

General Anesthesia may be supplemented with local or regional anesthesia for post-op pain management.

This is done prior to the initial incision.

Patient preparation

Hair usually not removed.

Use warm solutions if possible.

Types of solutions are according to surgeons preference.

Keep patient covered as much as possible, especially the head, during prep to maintain body temperature

Allow no fluids to pool under patient.

Draping is usually same way as for adults having the same procedures with some variations.

Common Instruments, Equipment, Supplies, Suture, and Medications

Instruments are often smaller, lighter, more delicate versions.

Adult size instruments may be used on older/larger pediatric patients.

Selection based on patient size and weight.

Examples of Sets

Pedi Major/Minor Set
Eye muscle Set
Circumcision Set
Pedi Thoracotomy Set
Pedi Open Heart Set
Pedi Orthopedic Set

Equipment

Scale

Warming devices

Pedi size positioning equip.

Isolette/infant transport/crib

Supplies

- Pedi sized supplies - tubes, drains, sponges, etc.
- Appropriate size “bovie” pad
- Blankets, head covers
- Diapers
- Soft, padded restraints

Suture

Surgeon's choice

Usually small needles

Often absorbable suture except for some skin closure.

Medications

Usually none.

May use collodion - a clear liquid painted over a closed wound for protection.

<u>CAUTION:</u> Liquid collodion is very flammable!!!

Definitions and Overviews of Selected Pediatric Surgical Procedures

Selected Pediatric Surgeries

- Umbilical hernia repair
- Gastrostomy
- Diaphragmatic hernia
- Oomphalocele repair
- Cleft lip/palate repair

Possible Complications of Pediatric Surgery

Bleeding

Infection

Airway Obstruction

Dehydration

Hypoglycemia

Hypothermia

Questions???

Take a Break !!!